

**ABSTRACT**

Dynamic binary translators enable binaries of a source platform to execute on a target platform without recompilation. This is achieved by runtime (on-the-fly) translation of source machine instructions into equivalent target machine instructions. Typically dynamic binary translators are used for migrating from an older platform to a newer one, implementing complex instruction set architectures, speeding up simulators and in profiling tools. In all these applications, the speed of translation is critical to ensure that the overhead incurred by the translator does not outweigh the advantages of dynamic translation.